AMENDED CLAIMS

[received by the international office on 3 January 2001 (03.01.01);

original claims 1-30 replaced by new claims 1-33 (4 pages)]

1. Composition comprising:

(a) a first element comprising a nucleic acid of interest under the control of an inducible promoter comprising a PPAR response element and a minimal transcriptional promoter, and

(b) a second element comprising a nucleic acid encoding a PPAR under the control of a transcriptional promoter,

for their use simultaneously, separately or spaced out over time.

2. Composition according to Claim 1, characterized in that it comprises in addition:

(c) a ligand for PPAR,

for a use simultaneously, separately or spaced out over time.

3. Composition according to Claim 1 or 2, characterized in that the elements (a) and (b) are carried by distinct genetic constructs.

4. Composition according to Claim 1 or 2, characterized in that the elements (a) and (b) are assembled in the same genetic construct.

5. Composition according to Claim 3 or 4, characterized in that the genetic construct is a plasmid or viral vector.

6. Composition according to Claim 5, characterized in that the viral vector is an adeno-associated virus (AAV).

7. Composition according to one of Claims 1 to 6, characterized in that the PPAR response element comprises one or more PPAR-binding sites.

8. Composition according to Claim 7, characterized in that the PPAR response element comprises one or more sites having the sequence SEQ ID NO:1 or functional variants of this sequence.

9. Composition according to Claim 7, characterized in that the PPAR response element comprises one or more sites having the sequence SEQ ID NO:5 or functional variants of this sequence.

10. Composition according to Claims 7 to 9, characterized in that the response element comprises up to 30 binding sites, preferably from 3 to 20, more preferably from 5 to 15.

11. Composition according to one of Claims 1 to 10, characterized in that the minimal promoter is a promoter of a cellular or viral gene deleted for the region(s) not essential for transcriptional activity.

12. Composition according to one of Claims 1 to 11, characterized in that the inducible promoter comprises, in addition, an enhancer region.

13. Composition according to one of Claims 1 to 12, characterized in that the minimal promoter and the PPAR response element are in the same orientation.

14. Composition according to one of Claims 1 to 12, characterized in that the minimal promoter and the PPAR response element are in the opposite orientation.

15. Composition according to one of Claims 1 to 14, characterized in that the nucleic acid encoding a PPAR encodes a PPARα or a PPARγ.

16. Composition according to one of Claims 1 to 15, characterized in that the nucleic acid encoding a PPAR encodes a modified PPAR comprising several ligand-binding sites.

17. Composition according to one of Claims 1 to 16, characterized in that it comprises, in addition, an element (d) comprising a nucleic acid encoding an RXR under the control of a transcriptional promoter.

18. Vector comprising an element (a) and an element (b) according to Claim 1.

19. Vector according to Claim 18, characterized in that the elements (a) and (b) are in the opposite orientation.

20. Vector according to Claim 18 or 19, characterized in that the inducible promoter of the element (a) and the transcriptional promoter of the element (b) are assembled in the vector to form a regulable bidirectional promoter.

21. Vector according to Claim 20, characterized in that it comprises, in the 5'→3' direction, a first nucleic acid encoding a PPAR, a first minimal transcriptional promoter controlling the expression of the said first nucleic acid, one or more PPAR response elements, a second minimal transcriptional promoter and, under the control of the said second minimal transcriptional promoter, a second nucleic acid encoding a product of interest.

22. Vector according to one of Claims 18 to 21, characterized in that it comprises, in addition, an element (d) according to Claim 17.

23. Use of a composition according to one of Claims 1 to 17 or of a vector according to one of Claims 18 to 22 for expressing a nucleic acid of interest in a cell ex vivo or in vitro.

24. Use of a composition according to one of Claims 1 to 17 or of a vector according to one of Claims 18 to 22 for the preparation of a product intended for expressing a nucleic acid of interest in a cell in vivo.

25. Method for the regulated expression of a nucleic acid in a cell, in vitro or ex vivo comprising bringing the said cell into contact with a composition according to one of Claims 1 to 17 or a vector according to one of Claims 18 to 22.

26. Method according to Claim 25, characterized in that it is a mammalian, preferably human cell.

27. Method according to Claim 26, characterized in that it is a muscle cell.

28. Method for regulating the expression of a nucleic acid in vivo comprising the administration of a composition according to one of Claims 1 to 17 or of a vector according to one of Claims 18 to 22.

29. Cell modified by bringing into contact with a composition according to one of Claims 1 to 17 or a vector according to one of Claims 18 to 22.

30. Modified PPAR comprising several ligand-binding sites.

31. Nucleic acid encoding a PPAR according to Claim 30.

32. Method for identifying PPAR ligands, comprising the bringing of a cell according to Claim 29 into contact with a test molecule and the detection of the expression of the nucleic acid of interest.

33. Method for identifying PPAR ligands in vivo, characterized in that there is administered a composition according to one of Claims 1 to 17 or a vector according to one of Claims 18 to 22 as well as a test molecule, and in that the expression of the nucleic acid of interest is detected.